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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,391	08/25/2006	Marcus Baertle	P30165	3571
7055 7590 04/09/2009 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				
EXAMINER SEMENTENKO, YURIY				
ART UNIT 2841		PAPER NUMBER		
NOTIFICATION DATE 04/09/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary

Application No.

10/598,391

Applicant(s)

BAERTELE, MARCUS

Examiner

YURIY SEMENENKO

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/24/2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 11-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Amendment filed 12/24/2008 has been entered.
Claims 11-30 are now pending in the application.

Drawings

2. The Drawings amendments, filed on 12/24/2008 are considered and acknowledged. The amendments to Figure 2 are approved.
The Examiner agrees that Drawing changes are no longer necessary because of the Applicant's explanations that "the expression "via holes" is a type of contact."

Specification

3. The Specification amendments, filed on 12/24/2008 are considered and acknowledged. The Specification amendments are approved.

Claim Objections

4. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 20 is identical of claim 19 from which it depends.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 – 30 are rejected under 35U.S.C. 103(a) as being unpatentable over Sugaya et al., (US 6538210) hereinafter Sugaya in view of Asahi et al. (US 6975516) hereinafter Asahi.

Regarding claims 11 and 22: Sugaya discloses in Fig. 4 an arrangement for increasing a packing density on a printed circuit with surface mounted electrical components the printed circuit comprising: two films 211 and 209 pressed against one another with a dielectric 200 arranged between them; and mutually opposite faces of the films being fitted with surface mounted electrical components 403a and 403b, Fig. 4B, via holes 208 being provided in the printed circuit to connect the two films, wherein each via hole of the via holes is a direct connection between the mutually opposite faces of the films, except, Sugaya doesn't explicitly teach the electrical components are mutually opposite.

Asahi teaches in fig. 12 the electrical components 1204a are mutually opposite.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Sugaya to include in his invention the electrical components are mutually opposite, as taught by Asahi because Asahi teaches that with such a configuration a slim and high-density mounted component built-in module can be provided, as taught by Asahi (col. 14:12-13).

Regarding claims 12 and 27: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim

11(22), further comprising further surface mounted electrical components 904b, 904c, Fig. 9A (Sugaya) arranged on faces 902aa3 and 902aa2 of the two films which are not mutually opposite.

Regarding claims 13 and 23: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 11(22), further comprising a further layer of a dielectric 905b, Fig. 9A (Sugaya) and a further film 902aa1 being applied to at least one face of the printed circuit.

Regarding claim 14: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, wherein the two films 209 and 211, Fig. 2 (Sugaya) contain copper (col. 13:37-38).

Regarding claim 15: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, further comprising first contacts 402c and 402c, Fig.4 (Sugaya) formed on at least one face of the printed circuit 400 (col. 18:56-63).

Regarding claim 16: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 13, wherein the via holes 913, Fig. 9B (Sugaya) are formed between the two films 901 and the further film 912 (col. 25:30-38).

Regarding claim 17: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, wherein the surface mounted electrical components 403b, Fig. 4 (Sugaya) are resistors, coils or capacitors (col. 11:57-60 and col. 17:43).

Regarding claim 18: Sugaya as modified by the teaching of Asahi discloses a stack 900, fig. 9A (Sugaya) having a plurality of printed circuits 909 and 910, as claimed in claim 11 arranged one on top of another.

Regarding claim 19: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 14, wherein the via holes 913, Fig. 9B (Sugaya) are formed between the two films 901 and a further film 912 (col. 25:30-38).

Regarding claim 20: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 15, wherein the via holes 913, Fig. 9B (Sugaya) are formed between the two films 901 and a further film 912 and (col. 25:30-38).

Regarding claims 21 and 26: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 11(22), wherein the two films are compressed films (Sugaya, col. 14:16-25, 56-67)).

Regarding claims 24 and 25: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, wherein the via holes are microvias (Sugaya, col. 14:34-39) are produced by one of drilling (col. 1: 23-25), electroplating and etching processes (col.11:50-52).

Regarding claim 28: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, further comprising embedding the surface mounted electrical components 103a, fig. 1 (Sugaya) in the dielectric 101 (col. 10:40-60).

Regarding claim 29: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim

22, further comprising soldering 1012, Fig. 10 (Sugaya) and (col. 26:25-26) the surface mounted electrical components 1004 to the two films 1011.

Regarding claim 30: Sugaya as modified by the teaching of Asahi discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, further comprising providing first contacts 902a3, Fig. 9B (Sugaya) which are formed on at least one face 901c of the two films 909 such that electrical connections are made to another printed circuit 910.

Response to Arguments

6. Applicant's arguments filed 12/24/2008 have been considered but are moot in view of the new grounds of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yuriy Semenenko/
Examiner, Art Unit 2841

/Dean A. Reichard/
Supervisory Patent Examiner, Art
Unit 2841